

Engineering Data

Stromberg-Carlson No. 130 Series Radio Receivers

STROMBERG-CARLSON TELEPHONE MANUFACTURING COMPANY
Rochester, New York

ELECTRICAL SPECIFICATIONS

Type of Circuit	Superheterodyne
Tuning Ranges	A—540 to 1500 Kc.; B—1450 to 3500 Kc.; C—5600 to 18,000 Kc.
Number and Types of Tubes:	
Nos. 130-H, 130-U, and 130-L Receivers	2 No. 6K7, 1 No. 6A8, 1 No. 6H6, 1 No. 6F5, 1 No. 6F6, 1 No. 80
Nos. 130-M and 130-R Receivers	2 No. 6K7, 1 No. 6A8, 1 No. 6H6, 1 No. 6F5, 1 No. 6F6, 1 No. 80, 1 No. 6E5
Power Supply Voltage	105 to 125 Volts
Power Supply Frequency	25 to 60 Cycles and 50 to 60 Cycles
Input Power Rating	70 Watts
Frequency of Intermediate Amplifier	465 Kilocycles

APPARATUS SPECIFICATIONS

Nos. 130-H, 130-U, 130-L, 130-R	50 to 60 Cycles	P-26246 Chassis; P-26171 Loud Speaker
Nos. 130-HB, 130-UB, 130-LB, 130-RB	25 to 60 Cycles	P-26247 Chassis; P-26171 Loud Speaker
No. 130-M	50 to 60 Cycles	P-26246 Chassis; P-26170 Loud Speaker
No. 130-MB	25 to 60 Cycles	P-26247 Chassis; P-26170 Loud Speaker

CIRCUIT DESCRIPTION

The No. 130 Series of Radio Receivers are divided into two groups; the Nos. 130-U, 130-H, and 130-L are seven tube receivers and are not equipped with the "Tri-Focal Tuning System". The Nos. 130-M and 130-R are eight tube receivers and are equipped with the exclusive Stromberg-Carlson "Tri-Focal Tuning System". A socket is provided on the rear of the chassis for making connections between the tuning indicator and receiver circuits. The chassis used in these different models of No. 130 Receivers are identical.

These No. 130 Receivers are composed of a seven tube chassis employing metal tubes, and have three tuning ranges. In order to obtain maximum performance from these receivers, a sensitivity control is provided for use on the standard broadcast band only. Its control knob is located on the rear of the chassis base. When either the "B" or "C" ranges are in operation, this sensitivity control is automatically cut out of the circuit so that the receiver will function at its maximum sensitivity on these two ranges. In some localities it will be found that without the use of this control, it will be impossible to eliminate adjacent channel interference. When this condition is obtained, the receiver should be tuned accurately to the desired station, and this sensitivity control adjusted so that minimum interference is obtained from the interfering station. See Figure 1.

The various tubes are used in these receivers as follows: One No. 6K7 tube is used in the R. F. Amplifier, and the other No. 6K7 is used in the I. F. Amplifier. The No. 6A8 tube functions as both Oscillator and Modulator tube. The No. 6H6 tube is used as a Demodulator and Automatic Volume Control tube. The No. 6F5 tube is used in the Audio Frequency Amplifier Stage (Driver), and the No. 6F6 tube is used in the Audio Power Output Stage. The No. 80 tube is the Rectifier tube of the power supply unit. In the Nos. 130-M and 130-R Receivers the No. 6E5 tube is used as the indicator of the Tri-Focal Tuning System.

NORMAL VOLTAGE READINGS

The various values of voltages listed in the following table are obtained by measuring between the various tube socket contacts and the chassis base, with the tubes in their respective sockets. The receiver is, therefore, in operation when the measurements are made. Figure 2 shows the terminal layout of the sockets with the proper terminal numbers.

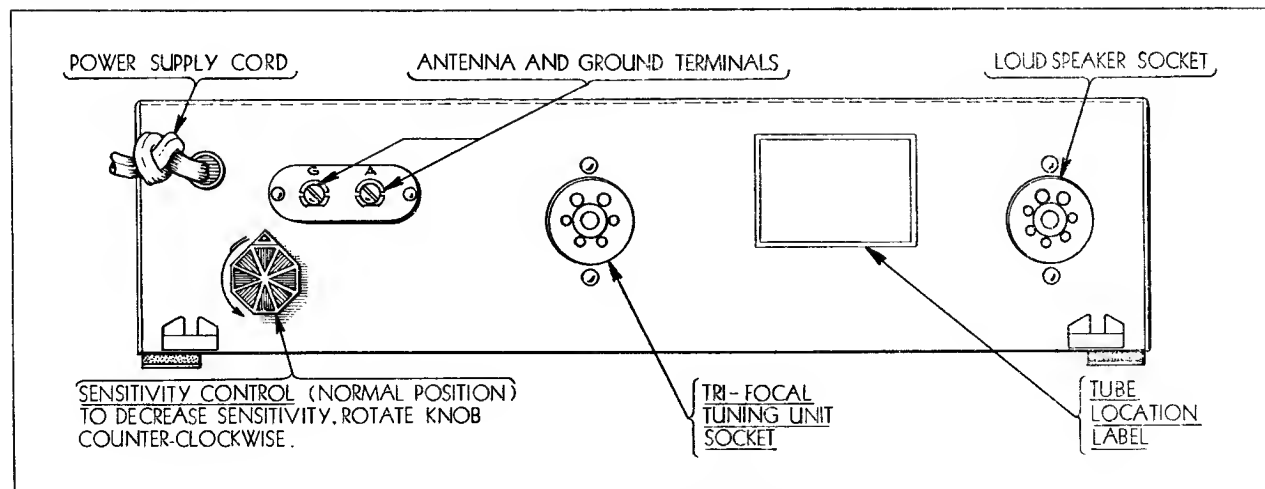


Fig. 1. Location and Operation of Sensitivity Control.

Voltages are given for a line voltage of 120 volts, and allowance should be made for differences when the line voltage is higher or lower. A meter having a resistance of 1000 ohms per volt should be used for measuring the D. C. voltages. Voltage values shown are those obtained on the lowest possible scale of a meter having the following ranges: 0-2.5, 0-10, 0-100, 0-250, 0-500, 0-1000 volts except when an asterisk appears after any given voltage value in which case the 1000 volt scale was used.

<i>Tube</i>	<i>Circuit</i>	<i>Cap.</i>	<i>Terminals of Sockets</i>								<i>Heater Voltages Between Heater Terminals</i>	
			1	2	3	4	5	6	7	8	<i>Socket Terminal Numbers</i>	<i>Volts</i>
6K7	R. F. Amp.	0	0	0	+ 54	+ 96	+7.6	+4.5	6.3	+7.6	2-7	6.3
6A8	Osc.-Mod.	0	0	0	+222	+ 72	-1.0	+143	6.3	+6.1	2-7	6.3
6K7	I. F. Amp.	0	0	0	+240	+ 96	+7.4	+4.5	6.3	+7.4	2-7	6.3
6H6	Dem.—A.V.C.	—	0	0	0	0	0	—	6.3	+4.5	2-7	6.3
6F5	Audio Amp.	0	0	0	—	+122*	—	—	6.3	+ .75	2-7	6.3
6F6	Audio Output	—	0	0	+226	+237	0	0	6.3	+ 15	2-7	6.3
80	Rectifier	—	+330	325	325	+330	—	—	—	—	1-4	4.8
Tri-Focal Tuning Indicator Plug's Socket When Tri-Focal Tuning Unit Is Used			6.3	0	+7.6	+235	+7.8	0	—	—	1-6	6.3
Tri-Focal Tuning Indicator Plug's Socket When Tri-Focal Tuning Unit Is Not Used			6.3	0	+7.6	+237	+7.3	0	—	—	1-6	6.3
Speaker Socket			+327	0	0	+327	+327	0	+237	—	—	—

Receiver tuned to 1000 Kc., no signal. A. C. voltages are indicated by italics.

ALIGNMENT DATA

All alignment adjustments are accurately made at the factory on these receivers and ordinarily no readjustments are necessary. However, should it become necessary to make any readjustments, this alignment procedure should be carefully followed.

In making any alignment adjustments always adjust the signal generator's output to the minimum value where a good alignment may still be obtained. Never attempt to make any alignment adjustments using a strong signal.

Figure 2 shows the location of all the aligning capacitors used in this receiver.

Intermediate Frequency Amplifier Adjustments

The intermediate frequency used in these receivers is 465 kilocycles. In making these I. F. circuit adjustments always align in the following order:

1. Secondary of 2nd I. F. Transformer (Capacitor C-13).
2. Primary of 2nd I. F. Transformer (Capacitor C-12).
3. Secondary of 1st I. F. Transformer (Capacitor C-11).
4. Primary of 1st I. F. Transformer (Capacitor C-10).

Radio Frequency Adjustments

The adjustments of the aligning capacitors used in the radio frequency circuits in this receiver should be very carefully made in the following order and at the frequencies specified below:

1. Oscillator's "C" Band Shunt Aligner at 17 Megacycles (Capacitor C-7).
2. R. F. Interstage "C" Band Shunt Aligner at 17 Megacycles (Capacitor C-6).
3. Antenna "C" Band Shunt Aligner at 17 Megacycles (Capacitor C-3).
4. Oscillator's "B" Band Shunt Aligner at 3.4 Megacycles (Capacitor C-8).
5. R. F. Interstage "B" Band Shunt Aligner at 3.4 Megacycles (Capacitor C-5).
6. Antenna "B" Band Shunt Aligner at 3.4 Megacycles (Capacitor C-2).
7. Oscillator's "A" Band Shunt Aligner at 1.4 Megacycles (Capacitor C-9).
8. R. F. Interstage "A" Band Shunt Aligner at 1.4 Megacycles (Capacitor C-4).
9. Antenna "A" Band Shunt Aligner at 1.4 Megacycles (Capacitor C-1).
10. Oscillator's "A" Band Series Aligner at 0.6 Megacycles (Capacitor (23)).
11. Oscillator's "A" Band Shunt Aligner at 1.4 Megacycles (Capacitor C-9).
12. R. F. Interstage "A" Band Shunt Aligner at 1.4 Megacycles (Capacitor C-4).
13. Antenna "A" Band Shunt Aligner at 1.4 Megacycles (Capacitor C-1).

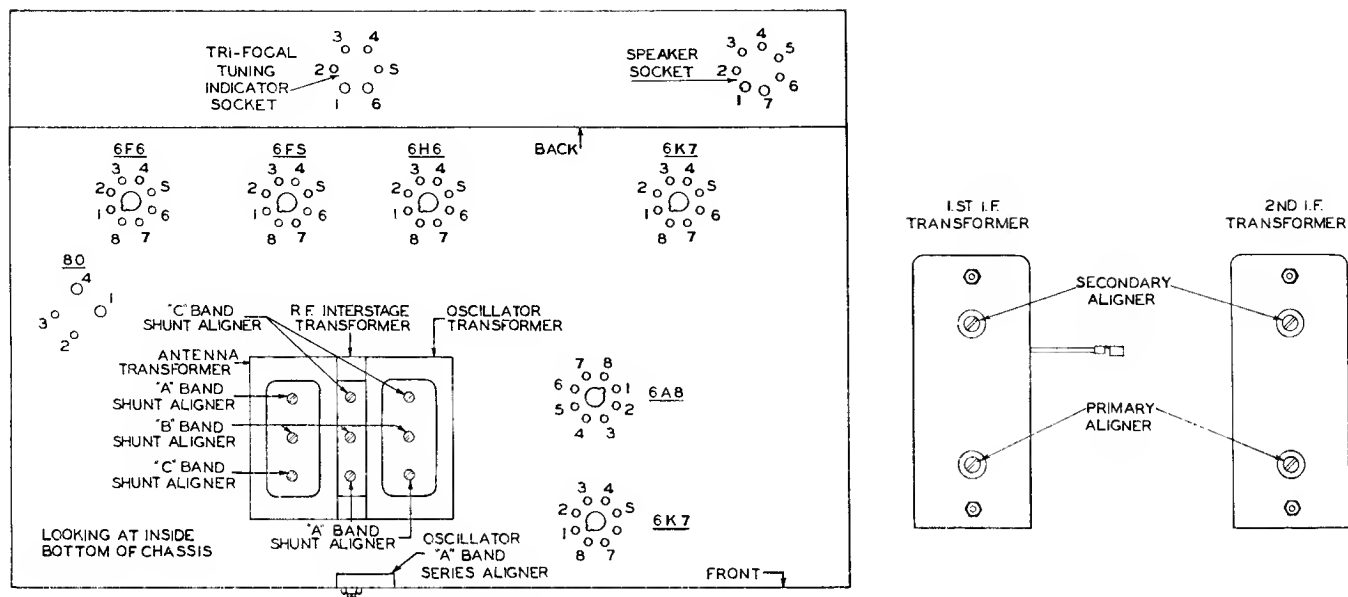


Fig. 2. Terminal Layout for Voltage Measurement Chart and Location of the Various Aligning Capacitors.

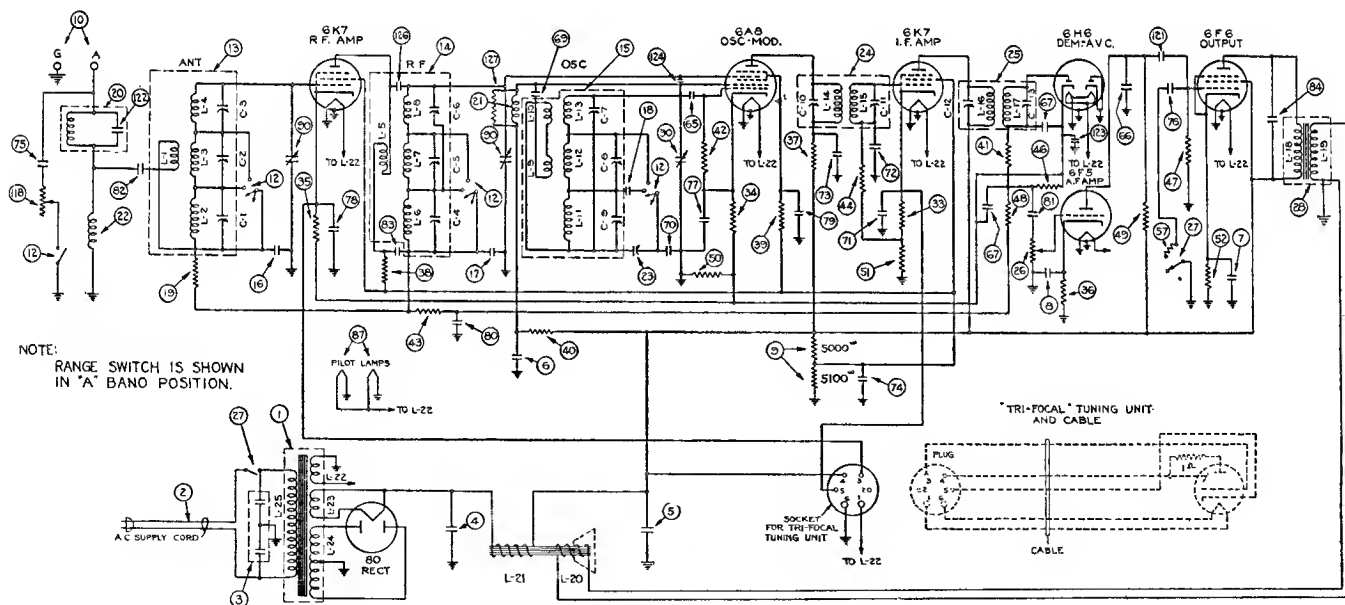


Fig. 3. Schematic Circuit of Receiver.

REPLACEMENT PARTS

Item Number	Piece Number	Part
1	26248	Power Transformer (50 to 60 Cycles)
1	26249	Power Transformer (25 to 60 Cycles)
2	24268	Cord, A. C. Supply
3	21535	Capacitor Assembly (2-.01 Mf. Capacitors)
4	26403	Capacitor, Electrolytic, 25Mf.
5	25458	Capacitor, Electrolytic, 16 Mf.
6	25458	Capacitor, Electrolytic, 16 Mf.
7	24207	Capacitor, Electrolytic, 10 Mf., 25 Volts
8	24207	Capacitor, Electrolytic, 10 Mf., 25 Volts
9	26405	Resistor, "B" Voltage Divider
12	26402	Range Switch
13	25510	Coil Assembly, Antenna
14	25511	Coil Assembly, R. F.
15	25512	Coil Assembly, Oscillator
16	25488	Capacitor, .002 Mf.
17	25527	Capacitor, .0027 Mf.
18	25490	Capacitor, .0038 Mf.
19	26383	Resistor, Type "E1", .1 Megohm
20	25513	Coil Assembly, Wave Trap
21	25814	Coil Assembly, R. F. Choke
22	25814	Coil Assembly, R. F. Choke
23	26047	Capacitor, Osc. Series Aligner
24	26406	1st I. F. Transformer
25	25506	2nd I. F. Transformer
26	26114	Potentiometer, Volume Control
27	26271	Switch, "Off-On-Tone"
28	26411	Transformer, Audio Output
29	22988	Socket, 4 Prong
30	22974	Socket, 6 Prong
31	23517	Socket, 7 Prong
32	25539	Socket, 8 Prong
33	26327	Resistor, Type "E", 330 Ohms
34	26326	Resistor, Type "E", 270 Ohms
35	26331	Resistor, Type "E", 680 Ohms
36	26340	Resistor, Type "E", 3900 Ohms
37	26341	Resistor, Type "E", 47,000 Ohms
38	26345	Resistor, Type "E", 10,000 Ohms
39	26345	Resistor, Type "E", 10,000 Ohms
40	26350	Resistor, Type "E", 27,000 Ohms
41	26353	Resistor, Type "E", 47,000 Ohms
42	26353	Resistor, Type "E", 47,000 Ohms
43	26357	Resistor, Type "E", .1 Megohm
44	26357	Resistor, Type "E", .1 Megohm
46	26365	Resistor, Type "E", .47 Megohm
47	26365	Resistor, Type "E", .47 Megohm
48	26369	Resistor, Type "E", 1 Megohm
49	26362	Resistor, Type "E", .27 Megohm
50	26328	Resistor, Type "E", 390 Ohms
51	26330	Resistor, Type "E", 560 Ohms
52	25500	Resistor, 400 Ohms, 1 Watt
57	26353	Resistor, Type "E", 47,000 Ohms
60	25998	Bracket Assembly
65	25504	Capacitor, 100 Mmf.
66	25504	Capacitor, 100 Mmf.
67	26512	Capacitor Assembly, 2—100 Mmf.
69	25487	Capacitor, .001 Mf.

Item Number	Piece Number	Part
70	25489	Capacitor, .00125 Mf.
71	24402	Capacitor Assembly, .1 Mf.
72	24402	Capacitor Assembly, .1 Mf.
73	25483	Capacitor Assembly, .1 Mf., 400 Volts
74	25483	Capacitor Assembly, .1 Mf., 400 Volts
75	25149	Capacitor Assembly, .01 Mf.
76	25149	Capacitor Assembly, .01 Mf.
77	25150	Capacitor Assembly, .02 Mf.
78	25150	Capacitor Assembly, .02 Mf.
79	25150	Capacitor Assembly, .02 Mf.
80	25150	Capacitor Assembly, .02 Mf.
81	25150	Capacitor Assembly, .02 Mf.
82	25150	Capacitor Assembly, .02 Mf.
83	25481	Capacitor Assembly, .002 Mf.
84	25533	Capacitor Assembly, .006 Mf.
87	26287	Pilot Lamp
89	26285	Dial Assembly
90	26414	Gang Tuning Capacitor
121	25149	Capacitor Assembly, .01 Mf.
122	25488	Capacitor, .002 Mf.
123	24402	Capacitor Assembly, .1 Mf.
124	26417	Capacitor, Gimmick
127	26350	Resistor, Type "E", 27,000 Ohms

MISCELLANEOUS PARTS

Piece Number	Part
26250	Cone Assembly (For P-26170 Speaker)
25492	Cone Assembly (For P-26171 Speaker)
26043	Plug (For Loud Speaker Cable)
26491	Plug (For Tri-Focal Tuning Unit Cable)
26369	Resistor, Type "E", 1 Megohm (Used at Socket of No. 6E5 Tube)
26147	Pilot Lamp Socket
26302	Knob (For Volume Control. Used on the Nos. 130-H, 130-U, 130-L, 130-M Receivers)
26303	Knob (For Volume Control. Used only on the No. 130-R Receivers)
26385	Knob (For Range Switch. Used on Nos. 130-H, 130-U, 130-L, 130-M Receivers)
26304	Knob (For Range Switch. Used only on the No. 130-R Receivers)
26384	Knob (For Off-On-Tone Control. Used on Nos. 130-H, 130-U, 130-L, 130-M Receivers)
26298	Knob (For Off-On-Tone Control. Used only on the No. 130-R Receiver)
26305	Knob (For Large Portion of Tuning Shaft. Used on the Nos. 130-H, 130-U, 130-L, 130-M Receivers)
26307	Knob (For Large Portion of Tuning Shaft. Used only on the No. 130-R Receivers)
26306	Knob (For Vernier Portion of Tuning Shaft. Used on the Nos. 130-H, 130-U, 130-L, 130-M Receivers)
26308	Knob (For Vernier Portion of Tuning Shaft. Used only on the No. 130-R Receivers)

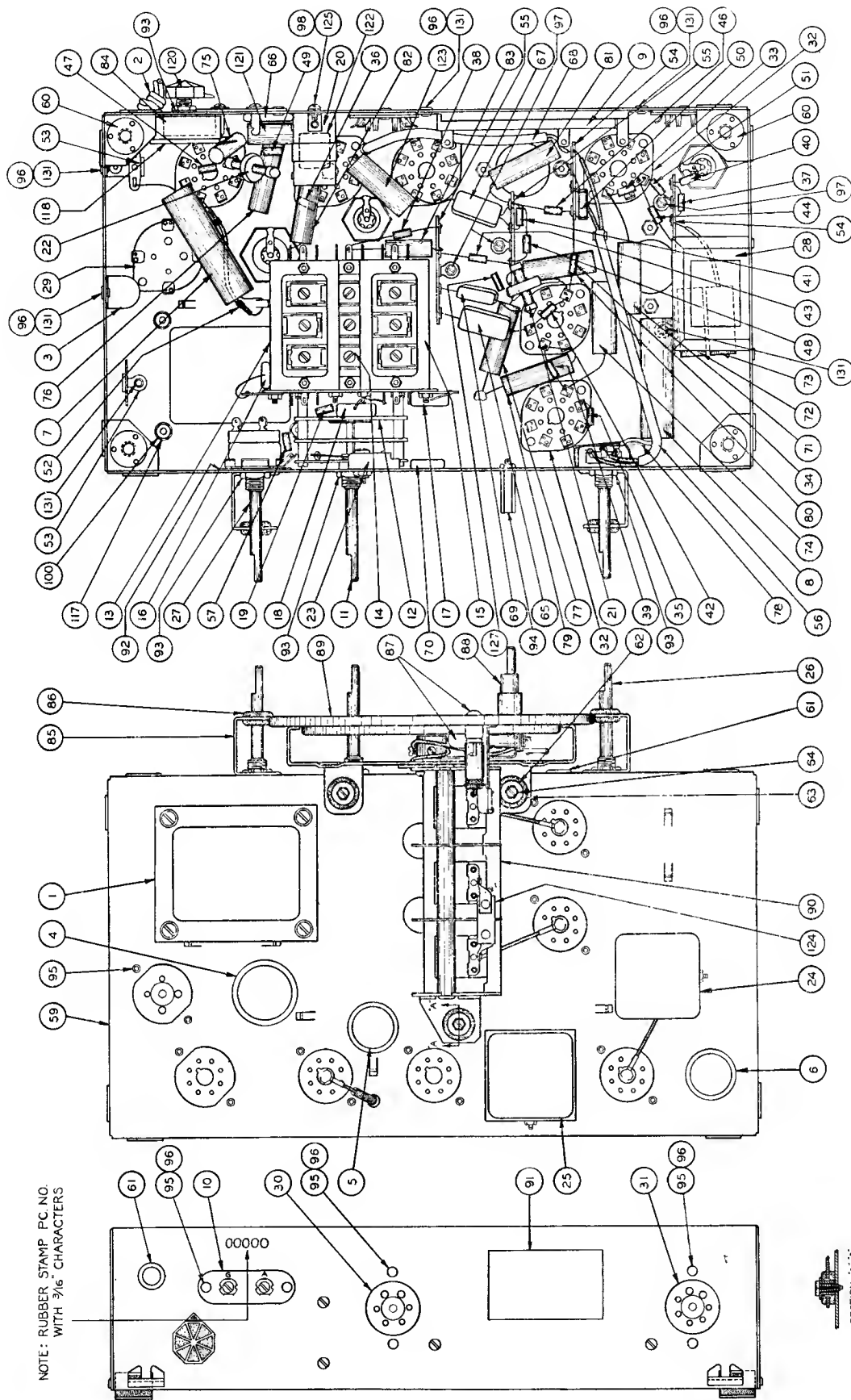


Fig. 5. Chassis Assembly.